इंटरनेट मानक

Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 1448-121 (1986): Methods of test for petroleum and its products, Part 121: Barium in lubricating oil additive concentrates [PCD 1: Methods of Measurement and Test for Petroleum, Petroleum Products and Lubricants]

Act Number 22 of 2005
The Indian Parliament
RIGHT TO INFORMATION

"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

Made Available By
Public.Resource.Org

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

BRUTUM FULMEN

IGNORANTIA JURIS NON EXCUSAT

PROTECTED BY COPYRIGHT

IS : 1448 [P : 121] - 1986
Adopted : *28 November 1986*
(Reaffirmed 2003)

Indian Standard

METHODS OF TEST FOR PETROLEUM AND ITS PRODUCTS

[P : 121]

BARIUM IN LUBRICATING OIL ADDITIVE CONCENTRATES

UDC 621·892 : 543 [546·431]

Adopted with permission from the Institute of Petrolem Standard No. IP 271/70 (Reapproved 1984)

1. SCOPE

1.1 This method describes a rapid procedure for the determination of barium in lubricating oil additive concentrates, containing not less than 2 percent barium, provided that other metals which form insoluble sulphates, for example, lead, are absent. Calcium at similar concentrations to the barium does not interfere.

2. OUTLINE OF METHOD

2.1 The sample is oxidized by means of concentrated sulphuric and nitric acids and the barium weighed as sulphate.

3. APPARATUS

3.1 Muffle Furance — capable of maintaining a temperature of 600 ±25°C.

4. REAGENTS

4.1 Sulphuric Acid — relative density 1·84 (98 percent by mass).

4.2 Nitric Acid — relative density 1·42 (70 percent by mass).

© *Copyright* 1987

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 1 *May* 1987

5. PROCEDURE

5.1 Accurately weigh into a 250-ml lipped beaker a quantity of sample containing if possible 0·06 to 0·12 g of barium, but not weighing more than 2 g.

5.2 Add 10-ml concentrated sulphuric acid, cover the beaker with a watch glass, and place it on a hot plate.

5.3 As soon as white fumes appear, slowly add approximately 2-ml of concentrated nitric acid down the side of the beaker by means of a dropper fitted with an acid-resistant teat and take down to white fumes again. Repeat this process until a clear, pale yellow solution is obtained. Take care to avoid spattering during this stage.

5.4 Allow the liquid to cool, insert a boiling stick, and then carefully dilute to approx 175 ml with water, taking care to wash off any precipitate adhering to the watch glass.

5.5 Place the beaker on a hot plate, boil gently for 15 minutes and then transfer to a steam bath for at least one hour.

5.6 Filter the contents of the beaker through a No. 4 porosity tared porcelain filter crucible of 20-ml capacity approximately using a rubber policeman to loosen any precipitate adhering to the beaker. Wash the precipitate thoroughly with hot water.

NOTE — An ashless filter paper may be used instead of a filter crucible. This should be dried and ignited in a tared platinum or silica crucible.

5.7 Dry the filter crucible at 100 to 120°C then ignite it at 600 ± 25°C for 30 minutes.

5.8 Cool the crucible in desiccator, and reweigh.

5.9 Repeat the ignition and weighing procedures until the mass is constant and record the mass of barium sulphate obtained.

6. CALCULATION

6.1 Barium, percent by mass $= \frac{58{\cdot}85\, A}{B}$

where

A = mass in g of barium sulphate; and

B = mass in g of sample.

7. REPORT

7.1 Report the result to three significant figures as barium content, percent by mass.

8. PRECISION

8.1 The precision of this method has not yet been established.

NOTE — A limited correlation programme on a sample containing 3·5 percent by mass of barium and a similar concentration of calcium gave the following data:

Repeatability	*Reproducibility*
0·08	0·14

Printed at Kapoor Art Press, New Delhi, India